Maine Yankee
RELIABLE ELECTRICITY FOR MAINE SINCE 1972

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10 CFR 50.73

November 9, 1989
MN-89-132

GDW-89-347

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

References: (a) License No. DPR-36 (Docket No. 50-309)

Subject: Maine Yankee Licensee Event Report 89-004-00, Plant Shutdown due to Containment Purge Valve Leakage in Excess of Technical Specification Limits

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report 89-004-00. This report is submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(i).

Very truly yours,

SENichols

for G. D. Whittier, Manager
Nuclear Engineering and Licensing

GDW:SJJ

Enclosure

cc: Mr. Richard H. Wessman
Mr. William T. Russell
Mr. Eric J. Leeds
Mr. Cornelius F. Holden
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NRC Form 366 (9-83)

U.S. Nuclear Regulatory Commission
Approved OMB No. 3150-0104
Expires: 8/31/85

LICENSEE EVENT REPORT (LER)

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Title(4) Plant Shutdown Due to Containment Purge Valve Leakage in Excess of Technical Specification Limits

Event Date(5)			LER Number(6)			Report Date(7)			Other Facilities Involved(8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
1 0	1 0	8 9	8 9	- 0 0 4	- 0 0	1 1	0 9	8 9		

This Report is Submitted Pursuant to the Requirements of 10 CFR § (Check one or more of the following) (11)

Operating Mode (9)	7	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
Power Level (10)	9 8	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	Other (Specify in Abstract below and in Text, NRC Form 366A)
		X 20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	Telephone Number
David A. Rivard, Nuclear Safety Engineer	Area Code 2 0 7 8 8 2 6 3 2 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to NPRDS	Cause	System	Component	Manufacturer	Reportable to NPRDS
X	J	M I S V	A 1 8 0	Y					

Supplemental Report Expected (14)		Expected Submission Date(15)	Month	Day	Year
Yes (If yes, complete Expected Submission Date)	X No				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 1230 on October 10, 1989, Maine Yankee initiated a plant shutdown as required by plant Technical Specifications. A Type C containment leakage rate test on the containment ventilation and purge inlet penetration demonstrated a leakage rate that resulted in a combined containment leakage rate in excess of the Technical Specification limit.

Additional testing showed excessive leakage past the seat of the outboard purge isolation valve. The shutdown continued due to the inability to quantify the leakage past the inboard isolation. The plant was placed in hot shutdown at 1740. Upon the repair of the outboard isolation valve seat, the inboard isolation valve leakage rate was determined to be less than the Technical Specification containment leakage rate limit.

No specific failure mechanism was identified. The seats on the inboard and outboard isolation valves were adjusted to obtain a satisfactory leakage rate.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On October 10, 1989, in preparation for an on-line containment purge, the containment ventilation and purge inlet isolation valves (ISV) were subjected to a Type C containment leakage rate test as described in 10 CFR 50 Appendix J. The leakage rate for this penetration (PEN) was approximately 152 lbm per day calculated at 55 psig. When this leakage rate was added to the remaining Type B and C leakage rates, the Technical Specification for the containment leakage rate of 365 lbm per 24 hours at 50 psig was exceeded by approximately 33 lbm per 24 hours.

At 1230 on October 10, 1989, the plant initiated a shutdown from 98% power as directed by Technical Specifications. Attempts were made to identify and correct the leakage. A valve stem packing leak on the inboard purge isolation valve (VP-A-2, see attached figure) was identified and repaired. Subsequent testing showed the leakage rate to be 148 lbm per day for the purge penetration. Additional investigation found excessive leakage past the seat on the outboard purge isolation valve (VP-A-1). Because the test pressure is applied between the two valves, leakage past VP-A-1 prevented quantification of the leakage rate past VP-A-2. Due to the inability to quantify the leakage rate past VP-A-2 within the time constraints of the Technical Specification remedial actions, the plant was placed in hot shutdown (Condition 5) at 1740.

VP-A-1 and VP-A-2 are 42 inch butterfly valves, manufactured by Allis Chalmers, model number 75WR. These valves have an adjustable rubber seat on the valve disc. This is the first leakage test failure of this penetration subsequent to a satisfactory leakage rate test with no valve manipulations between tests.

Conditions for cold shutdown (Condition 3) were established at 1430 on October 11, 1989. A containment purge was performed which required cycling VP-A-1 and VP-A-2. Upon completion of the purge, the seat on VP-A-1 was adjusted so that a soap solution test at 60 psig showed no leakage. Leakage past VP-A-2 was then determined to be approximately 19 lbm per 24 hours, which verified that the total containment leakage rate had been within the Technical Specification limit. No specific failure mechanism could be identified.

This event is considered to have a negligible safety consequence. The purge valves were previously tested on December 11, 1988. Containment leakage since that time was well within the allowed limit as determined by the containment weight of air monitoring system. The measured leakage rate of VP-A-2 at 19 lbm per day, combined with the remaining Type B and C leakage rates, was within the Technical Specfication limit. Additionally, the purge isolation valves are maintained tagged shut and deactivated by administrative controls during plant operation except when containment purge is in progress. Therefore, VP-A-2 was in the condition prescribed by the Technical Specification remedial action for a single inoperable containment penetration isolation valve.

After the adjustments were made to reduce seat leakage, the valves were cycled with both manual and remote actuators. Subsequent leakage rate tests showed negligible change in the leakage rate.

The seats on both VP-A-1 and VP-A-2 were adjusted to obtain a final leakage rate for the penetration of approximately 4 lbm per 24 hours. The penetration was successfully tested during a subsequent shutdown on November 8, 1989. This penetration will again be tested at the beginning of the 1990 refueling shutdown, in the spring of 1990.

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